# The Panda Math Tutor

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# Rearranging Formulas

## Student Worksheet

Questions & Working Space

IGCSE Mathematics

Name: _____

Date: _____

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Prepared by

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**Note**

**How to use this worksheet.** These questions are built *strictly* on the *Rearranging Formulas* notes: the subject of a formula, the balance principle, inverse operations, one-step and multi-step rearrangements, powers and roots, fractions, formulas where the subject appears more than once, harder rearrangements, and real-world applications.
**Working space.** Ruled lines are provided after each question — show *all* of your working there, write one rearrangement per line, and state the inverse operation you are using. Harder questions have a teal **Hint** box; try the question first and use the hint only if you are stuck.
**Always check.** Substitute your answer back into the original formula, or work backwards, to confirm it. This single habit catches almost every sign error.
**Checking your answers.** Full step-by-step solutions, a marking scheme for the exam paper, and a quick answer key are in the separate booklet *"Rearranging Formulas — Solutions & Answer Key."* Try each question honestly before you look.

# 1 Part I — Topic-by-Topic Exercises

## 1.1 The Subject of a Formula and Inverse Operations

**Exercise E1** *[Basic]*

Write down the subject of each formula:

(a) $d = st$ (b) $u = v - at$ (c) $L = 4s$ (d) $k = \dfrac{p}{q}$

**Exercise E2** *[Basic]*

Write down the inverse of each operation:

(a) adding 9 (b) dividing by 7 (c) squaring (d) taking a cube root

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**Exercise E3** *[Standard]*

For the formula $y = 4x + 1$:

(a) Describe, in order, the two operations that are applied to $x$.

(b) Write down the two inverse operations, in the order you would use them to make $x$ the subject.

**Exercise E4** *[Standard]*

A student rearranges $T = k - 6$ and writes $k = T - 6$. Identify the error and give the correct rearrangement.

**Exercise E5** *[Intermediate]*

Both sides of the formula $R = 4a + 8b$ are divided by 4. Explain why the result is $\frac{R}{4} = a + 2b$ and **not** $\frac{R}{4} = a + 8b$.

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